

REMARKS

The present application relates to hybrid maize plant and seed X1139Y. Claims 1-32 are currently pending in the present application. Applicants respectfully request consideration of the following remarks.

I. Claims

Applicant respectfully submits the addition of new claims 33 through 41. The new claims do not add new matter. Support for the claims can be found in the originally filed specification.

II. Claim Objections

Claims 12, 16, 25, and 29 were objected to. The Examiner states in line 1 of the claims, "A" should be --The--.

Applicants have amended the claims by replacing "A" with --The--, thus alleviating this rejection.

III. Double Patenting

Claims 1-7 and 9-20, and 22-32 were rejected under the doctrine of obviousness-type double patenting as being unpatentable over claims 1-30 of US Patent No. 6,114,612 ('612). The Examiner states that although the conflicting claims are not identical, they are not patentably distinct from each other because they both appear to be drawn to the same maize seeds, plants, plant parts, and methods. Any differences between X1139Y and 32K72 of '612 are due to minor morphological variations that do not confer patentable distinction. The Examiner concludes that since X1139Y and 32K72 of '612 are not patentably distinct, the claimed methods that comprise their use are obviously the same as well. Therefore, a patent issuing from the instant application would then effectively extend the patent term of the claims of '612.

Applicant traverse this rejection. Claims 1-7 and 9-20, and 22-32 are patently distinct because they involve a novel maize seeds, plants, plant parts, and methods. Applicants arguments are set forth infra in Claim Rejections 102/103 section. Applicant further asserts the use of the designation "X1139Y" is not arbitrarily assigned. It is common practice within plant breeding that a new and distinct maize seed is designated with a numerical number such as

X1139Y which defines the claimed hybrid maize seed which will be deposited under an ATCC accession number. The use of such a designation is a common practice within the art and would be well understood by one skilled in the art to be two distinct and unrelated hybrid maize seeds. In addition, as provided in 37 C.F.R. §§ 1.801-1.809, Applicant wishes to reiterate they will refrain from deposit of Hybrid X1139Y until allowable subject matter is indicated. Once deposit is completed Applicant will amend claims 1, 5 and 7 accordingly and this rejection will be moot. Therefore, Applicant submits this terminology is not indefinite and reconsideration is respectfully requested.

IV. Claim Rejections-35 USC §112

Claims 1-32 were rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner states that the recitation "X1139Y" or X1139Y (commercial designation) in claims 1, 5, 7, 11, 15, 19, 24, 28, and 32 render the claims and those dependent thereon indefinite. Further, the missing commercial designation also renders the claims indefinite, as the presence of the blank line makes the claims incomplete. The missing ATCC accession number in claims 1, 5, and 7 also render the claims indefinite, as the claims do not clearly identify the deposited seed. The Examiner states that amending claims 1, 5, and 7 to recite the ATCC deposit number in which hybrid maize seed X1139Y has been deposited would overcome this rejection.

Applicants respectfully submit that the actual ATCC deposit will be delayed until the receipt of notice that the application is otherwise in condition for allowance. As provided in 37 C.F.R. §§ 1.801-1.809, Applicants wish to reiterate they will refrain from deposit of Hybrid X1139Y until allowable subject matter is indicated. Once such notice is received, an ATCC deposit will be made, and the specification will be amended to contain the accession number of the deposit, the date of the deposit, a description of the deposited biological material sufficient to specifically identify it and to permit examination and the name and address of the depository. The claims (1, 5 and 7) will also be amended to recite the ATCC deposit number. In addition, Applicants submit that at least 2,500 seeds of Variety X1139Y will be deposited with the ATCC. In view of this assurance, the rejection under 35 U.S.C. § 112, first paragraph, should be removed (MPEP § 2411.02). Such action is respectfully requested.

With respect to claims 11, 15, 19, 24, 28, and 32, the recitation "commercial designation" has been deleted, thus alleviating this rejection.

Claims 11, 15, 19, 24, 28, and 32 were rejected under 35 USC 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner states that the terms "excellent", "good", "very good", "moderate", and "suited" are relative terms that have no definite meaning. The terms do not reasonably apprise one of the scope of the invention. Moreover, the recitation "stability of performance across years and environments" also renders the claims indefinite as the Examiner is unclear as to what the meanings of "performance", the number of years in "across years", and the types of environments are not clear.

Applicants traverse this rejection. Each of these claims recites two requirements, first that X1139Y be an ancestor of the plant and second, that the claimed plant be "capable of expressing a combination of at least two X1139Y traits" selected from a Markush grouping. Applicant notes that the Markush listing is directed to "X1139Y" traits. Thus, Applicant submits that the recitation of X1139Y traits clearly delineates the traits listed as those which are from X1139Y or ancestors thereof. The recitation of "X1139Y" in front of the term traits clearly indicates that the traits must be originating from X1139Y. This is particularly so since the claim also requires that the plant X1139Y must be an ancestor of the claimed plant. Applicant further submits that the adjectives used within the claims are not unduly narrative or imprecise as they do clearly characterize and positively recite the degree of expression of the particular traits within the application in Tables 1-4 (pages 18-40). This terminology is well known in the art and commonly used within breeding techniques of hybrid plants. In addition, Applicant asserts it is exactly clear what states or geographic areas define these regions and would be understood to one skilled in the art. Applicant respectfully submits that this language is not indefinite and would be understood by one in the art and is the terminology of use within the art. Therefore, Applicant respectfully requests reconsideration.

Furthermore, in Georgia-Pacific, the Federal Circuit stated that "...the policy of the patent statute contemplates granting protection to valid inventions, and this policy would be defeated if protection were to be accorded only to those patents which were capable of precise definition." Georgia-Pacific Corp. v. U.S. Plywood Corp., 258 F. 2d 124, 136, 118 USPQ 122 (2d

Cir.), cert. denied, 358 US 884 (1958). While some decisions have advocated the general statement that "[a]n invention must be capable of accurate definition, and it must be accurately defined, to be patentable" (See United Carbon Co. v. Binney & Smith Co., 1942, 317 US 228, 237, 63 S.Ct. 165, 170, 87 L.Ed. 232), the Federal Court has stated that "such general statements, however, must be viewed in the context of circumstances. Objectionable indefiniteness must be determined by the facts in each case, not by reference to an abstract rule." Georgia-Pacific at 136. "Patentable inventions cannot always be described in terms of exact measurements, symbols and formulae, and the applicant necessarily must use the meager tools provided by language, tools which admittedly lack exactitude and precision. If the claims read in light of the specifications, reasonably apprise those skilled in the art both of the utilization and scope of the invention, and if the language is as precise as the subject matter permits, the courts can demand no more." Georgia-Pacific at 136. (See North Am. Vaccine, Inc. v. American Cyanamid Co., 7 F.3d 1571, 28 USPQ 2d 1333, 1339 (Fed. Cir. 1993)). Moreover, it is against the policy of the patent statutes to bar patent protection for inventions that are incapable of precise definition. Georgia-Pacific Corp. v. U.S. Plywood Corp., 258 F. 2d 124, 118 USPQ 122 (2d Cir.), cert. denied, 358 US 884 (1958). With respect to the above-mentioned terms, the claims are as precise as the subject matter of the invention permits. Therefore, Applicant respectfully requests reconsideration of the claims.

The Examiner states further that the recitation "Central Corn Belt", and "Northeast regions of the United States" also render the claims indefinite as it is not exactly clear what states or geographic areas make up this region, besides those listed in the claim.

Applicants have amended the claims by stating what states make up this region, thus alleviating this rejection.

Claims 10, 14, 18, 23, 27, and 31 are indefinite for improper antecedent basis. The Examiner states the claims indicate they are directed to the corn plant breeding program of claims 9, 13, 17, 22, 26, and 30, respectively. However, claims 9, 13, 17, 22, 26, and 30 are directed to methods, not programs. The Examiner suggests that the recitation "corn plant breeding program" in line 1 of claims The claims 10, 14, 18, 23, 27, and 31 be replaced with --method--.

Applicants have amended the claims in accordance to Examiner's suggestion by changing the recitation "corn plant breeding program" in line 1 of claims 10, 14, 18, 23, 27 and 31 with --method--, thus alleviating this rejection.

V. Claim Rejections-35 U.S.C. § 112

Claims 8, 11-19, 21, and 24-32 were rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The Examiner asserts that the specification does not describe X1139Y as being male sterile. The specification discusses how plants may be manipulated to be male sterile, however, the morphological and physiological description of plant X1139Y described in the specification does not indicate that it is male sterile.

Applicants have amended claims 8 and 21 by adding the recitation --has been manipulated to be male sterile--, thus alleviating this rejection. Support can be found on page 13 of the specification, between the definitions for POL WT and POP K/A wherein it states "[i]t should be understood that the inbred can, through routine manipulation of cytoplasmic or other factors, be produced in a male-sterile form. Such embodiments are also contemplated within the scope of the present claims."

Next, the Examiner asserts the specification also does not describe the plants developed by the maize breeding programs, transgenic X1139Y plants, X1139Y plants further comprising genes transferred by backcrossing, or maize plants wherein at least one ancestor is corn variety X1139Y and which expresses at least two of the traits listed in claims 11, 15, 19, 24, 28, or 32. The morphological and physiological traits of the corn plants that are crossed with X1139Y, and with progeny of that cross are unknown, and the description of progeny and descendants of corn plant X1139Y are unknown. The Examiner further asserts that the description of corn plant X1139Y is not indicative of any of its descendants. To say that a plant expresses two traits of another plant is not sufficient information to describe that plant, as numerous plants express at least two of the same traits as those expressed by X1139Y. Two plant traits do not provide any description of the other traits of a plant. It is possible that the claimed plants inherited the genes governing those traits from an ancestor other than plant X1139Y.

Applicants have amended claims by adding the threshold, having 50% of the ancestral alleles that limits the variation permitted among the genus, as well as an assayable function capable of expressing at least a combination of two traits of X1139Y. Support for such is found in the specification as disclosed on page 3 and beginning on page 32 of the instant specification. In the transmission of alleles, 50% of the ancestral alleles will come from X1139Y.

Plant breeding techniques known in the art and used in a maize plant breeding program include, but are not limited to the following: recurrent selection backcrossing, pedigree breeding, restriction length polymorphism enhanced selection, genetic marker enhanced selection and transformation. With the amendments to the above stated claims, Applicants have identified a transgenic X1139Y plant (claim 12), X1139Y plant further comprising genes transferred by backcrossing (claim 19), or a maize plant wherein at least one ancestor is corn variety X1139Y (claim 33) by defining a particular threshold that limits variation and reciting a functional test to identify such plants. In addition, Applicants have drafted new claims which they believe come within the purview of the written description requirement and do not add new matter.

Under the written description requirement, Applicants should be allowed to claim the progeny of a cross of corn plants crossed with X1139Y with phenotypic characteristics since distinguishing identifying characteristics in the chemical and biotechnological arts, dealing with DNA, are those such as: partial structure, physical and/or chemical properties, functional characteristics, known or disclosed correlation between structure and function, method of making, and combinations of the above. In plants, these identifying characteristics are those detectable in the phenotype which are manifested through gene expression. Claims to a particular species of invention are adequately described if the disclosure of relevant identifying characteristics are present in the application. Again, one of ordinary skill is reasonably apprised in knowing that a plant crossed with X1139Y will result in a plant having half of the genetic contribution of X1139Y. A further limitation set by Applicants is that the plant must be capable of expressing a combination of at least two phenotypic characteristics of X1139Y.

Further, Applicant asserts the specification supplies an extensive definition and description of 'transgene' and transgenes of interest. (See generally pages 41-52 and pages 46-52 for an extensive list of potential transgenes). Applicant also notes, a person having skill in the art could insert a DNA gene into a selected maize plant. The Examiner also states that the insertion of a single copy of a gene into a plant would produce a plant that is indistinguishable from its

non-transformed plant. Applicant has defined transgenes in the present application in the paragraph that spans pages 41-42 as follows:

With the advent of molecular biological techniques that have allowed the isolation and characterization of genes that encode specific protein products, scientists in the field of plant biology developed a strong interest in *engineering the genome of plants to contain and express foreign genes, or additional genes* (perhaps driven by different promoters) in order to alter the traits of a plant in a specific manner. *Such foreign, additional and/or modified genes are referred to herein collectively as "transgenes".* Over the last fifteen to twenty years several methods for producing transgenic plants have been developed, and *the present invention, in particular embodiments, also relates to transgenic versions of the claimed hybrid X1139Y.*

(emphasis added) The present application clearly describes and defines a transgene to be a gene transferred into a plant wherein the product of that gene is expressed. This expression will confer a new or improved trait into that plant. However, this gene is but a tiny fraction of the entire genome. In other words, the plant of claim 12 is distinguishable from the prior art plants just as is hybrid X1139Y without the transgenes. Further, the plant of claim 12 also contains a trait(s) that is either improved or additional to the traits of the maize plant of claim 2. The X1139Y-transgenic plant still expresses the unique combination of traits of X1139Y without the transgenes with the exception of the traits expressed by the transgenes. The trivial modifications introduced by the transgenes to the unique invention of X1139Y are clearly supported and described in the present application.

The Examiner also asserts it is not known what genes X1139Y would be affected in the claimed methods comprising breeding programs. Additionally, the traits of plants produced by the programs are unknown, and not described by the specification. The transgenes, and genes introduced into X1139Y by backcrossing, may be of gene(s) that effect any trait or more than one trait. Such plants would express different morphological and physiological traits from X1139Y, and which are not described.

Applicants traverse this rejection. The pedigree association with physical appearance or performance in plants allow parents that have contributed favorable alleles for desirable traits through selective breeding programs to be identified. (Bowers, J.E. and C.P. Meredith, 1997 The parentage of a classic wine grape, Cabernet Sauvignon. Nat. Genet. 16: 84-87). Performing the breeding steps described in the specification will provide plants which retain the beneficial features of X1139Y and the transgene. There are methods disclosed to identify those plants and

thus these claims satisfy § 112. Therefore, claims 11, 15, 19, 24, 28, and 32 encompass the requirements of the written description and would work for its intended purpose.

Based on the foregoing argument and amendments to the claims, adequate written description of the multitude of corn plants and their parts are believed to be encompassed by the amended claims. Reconsideration is respectfully requested.

Claims 1-32 were rejected under 35 USC 112, first paragraph, as containing subject matter which is not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The Examiner states the claims are broadly drawn. Since the claimed seed of maize hybrid line X1139Y is essential to the claimed invention, it must be obtainable by a repeatable method set forth in the specification or otherwise be readily available to the public. The Examiner further states that if the seed is not so obtainable or available, a deposit thereof may satisfy the requirements of 35 USC 112. The specification does not disclose a repeatable process to obtain the exact same seed in each occurrence and it is not apparent if such a seed is readily available to the public. The Examiner further states that if the seeds are deposited under the terms of the Budapest Treaty, then an affidavit or declaration by the Applicants, or a statement by an attorney of record over his/her signature and registration number, stating that the seed will be irrevocably and without restriction or condition released to the public upon the issuance of a patent would satisfy the deposit requirement made herein.

Applicants respectfully traverse this rejection. As provided in 37 C.F.R. §§ 1.801-1.809, Applicants wish to reiterate they will refrain from deposit of hybrid X1139Y until allowable subject matter is indicated. Once such notice is received, an ATCC deposit will be made, and the specification will be amended to contain the accession number of the deposit, the date of the deposit, a description of the deposited biological material sufficient to specifically identify it and to permit examination and the name and address of the depository. The claims (1, 5 and 7) will also be amended to recite the ATCC deposit number. In addition, Applicants submit that at least 2,500 seeds of Variety X1139Y will be deposited with the ATCC. In view of this assurance, the rejection under 35 U.S.C. § 112, first paragraph, should be removed (MPEP § 2411.02). Such action is respectfully requested.

VI. Issues Under 35 U.S.C. § 102/103

Claims 1-32 were rejected under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Colbert (U.S. Patent 6,114,612). The Examiner states the claims are broadly drawn towards the instant claims.

Applicants traverse this rejection. The Applicants would like to point out that the inventions X1139Y and 32K72 are not the same inventions. Nor are their differences minor morphological variations. Applicants submit that the claimed plant cannot be rendered obvious or lacking novelty as it possesses a unique combination of traits which confers a unique combination of genetics.

Moreover, Applicants claim a method of making a plant which did not previously exist. Pursuant to the recent Federal Circuit decision, Elan Pharmaceuticals, Inc. v. Mayo Foundation for Medical Education & Research, No. 00-1467 (Fed. Cir. Aug. 30, 2002), "a novel patented product is not "anticipated" if it did not previously exist." Id. This is the case whether or not the process for making the new product is generally known. Id. The invention X1139Y has not previously existed as it is the result of the crossing the two maize inbred lines GE565937 and GE502199.

Furthermore, the inventions X1139Y and 32K72 differ for various traits that are not minor. For example, Table 2C of the instant specification shows that hybrid X1139Y has a significantly higher yielding than hybrid 32K72; hybrid X1139Y is later to mature with a significantly higher number of growing degree units to pollen shed and to silk than hybrid 32K72; hybrid X1139Y also exhibits significantly taller plant stature with significantly higher ear placement as well as significantly superior stay green than 32K72; hybrid X1139Y exhibits superior stalk lodging resistance with significantly superior regular stalk lodging and stalk lodging percent mean scores than hybrid 32K72; hybrid X1139Y exhibits significantly better resistance to Anthracnose Stalk Rot and a significantly larger husk cover than hybrid 32K72.

The aforementioned examples all illustrate that there are differences between X1139Y and 32K72. The examples listed are not exhaustive but they do give ample evidence that the inventions are not the same. Furthermore, when looking at the tables of both inventions, hybrids created using X1139Y as one of the parents are clearly not anticipated by hybrids made using 32K72 as one of the parents.

Applicants further submit that the claims do not simply recite traits, but instead recites these specific traits only to the extent that they are "X1139Y" traits; thereby being derived from the seed/germplasm of X1139Y. Note, variety with respect to agricultural variety, can be defined as a group of similar plants that by structural features and performance can be identified from other varieties within the same species. Moreover, the claims also recites that the claimed plant must have X1139Y as an ancestor further indicating that these traits were derived from the X1139Y plant.

In response to the Examiner's contention that one could not distinguish the claimed plant from the prior art which shows each of these traits, Applicants submit that one can easily tell by reference to the plants breeding history, which can be confirmed by its molecular profile whether the plant has plant X1139Y as an ancestor and expresses two or more "X1139Y" traits. Further, any phenotypic trait that is expressed is the result of the genetic material present in the plant, and X1139Y will have its own unique genetic background that will give rise to the claimed plant and this profile along with its combination with other plants will result in a unique combined genetic profile that is the product claimed.

Furthermore, there is no expectation of success that the crossing of the Hybrid 3K72 with some yet to be identified plant would yield a plant with two of the traits enumerated in the claimed invention and at least 50% of its ancestral alleles from X1139Y because that particular plant did not begin with the claimed seed X1139Y which is essential. Applicant asserts that it is not the phenotypic characteristics alone that are claimed and taught in the instant invention. It is a combination of physiological and morphological characteristics, as claimed, which make the present Hybrid non-obvious and not anticipated over Colbert '612. Further, In re Thorpe, states that "a product by process claim may be properly rejected over prior art teaching the same product produced by a different process", as noted by the Examiner. 227 U.S.P.Q. 964, 966 (Fed. Cir. 1985). However, Applicant submits that this is not the same product physiologically or morphologically as the cited prior art as can be evidenced by one skilled in the art through analysis of the data tables in each. In addition, it is impermissible to use hindsight reconstruction and the benefit of Applicant's disclosure to pick among pieces which are present in the art, there must be some suggestion to make the combination and an expectation of success. In re Vaeck, 20 U.S.P.Q.2d 1434 (Fed. Cir. 1991). Further, any phenotypic trait that is expressed is the result of the genetic material present in the plant, and X1139Y will have its own unique genetic

background that will give rise to the claimed plant and this profile along with its combination with other plants will result in a unique combined genetic profile that is the product claimed. Thus, the present application deserves to be considered new and non-obvious compositions in their own right as products of crossing when X1139Y is used as a starting material.

In light of the above, Applicants respectfully request the Examiner reconsider and withdraw the rejection to claims 11, 15, 19, 24, 28 and 32 stand rejected under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Colbert (U.S. Patent 6,114,612).

VII. Issues Under 35 U.S.C. § 103

Claims 1-32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Colbert (U.S. Patent 6,114,612). The Examiner states the "claims are drawn to a hybrid maize plant exhibiting all of the characteristics of 32K72".

Applicants traverse this rejection. When looking at a maize plant it would be possible to find many traits that are similar between varieties such as the color of flowers or growth habit. However, to say there are similarities in phenotype between two varieties is not the same as saying that the two varieties have the same morphological and physiological characteristics as a whole, or that one is an obvious variant of the other. Further, similarity in phenotype does not mean that the two varieties will perform similarly, particularly in a breeding program. As stated above, variety with respect to agricultural variety may be defined as a group of similar plants that by structural features and performance can be identified from other varieties within the same species.

Applicants submit that hybrid X1139Y does not exhibit the same characteristics as 32K72. Applicants will illustrate how X1139Y and 32K72 are different. Colbert does not teach or suggest hybrid maize plant X1139Y developed by a maize breeding program or the use of hybrid maize plant X1139Y in the production of tissue culture. It must be recognized that the hybrids provided by this invention are themselves unusual and unobvious results of a common process, in that they provide the unique combination of, for example, good yield and stable performance with excellent plant health and disease tolerance. Thus, hybrid X1139Y deserves to be considered as a new and non-obvious composition in its own right as does its tissue culture as products of the process when X1139Y is used as starting material. Applicants point out that

X1139Y is a unique plant hybrid which never before existed until Applicants filed the application and until its deposit of the same. As will be demonstrated below, several morphological and physiological characteristics of hybrid X1139Y are either different from or not present in 32K72.

*Differences between the two varieties are summarized in the table below:

<u>CHARACTERISTICS</u>	<u>X1139Y</u>	<u>32K72</u>
Tassel:		
Anther color	Pink	Light Green
Glume color	Pink	Light Green
Ear (Unhusked):		
Silk color	Pink	Light Green
Position of Ear at Dry Husk Stage	Pendant	Upright
Ear (Husked):		
Ear weight	207 gm	196 gm
Number of kernel rows	15	17
Row Alignment	Slightly curved	Straight
Kernel (Dried)		
% Round kernels (Grade)	60	23
Aleurone color	Yellow	White
Hard endosperm color	Yellow	White
Endosperm type	Normal starch	Other (white)
Cobb color	Red	White
Disease Resistance:		
Common Rust (<i>Puccinia sorghi</i>)	4, where 1=most susceptible and 9=most resistant	No teaching
Northern Leaf Blight (<i>Exserohilum turcicum</i>)	6	2

*Difference drawn from the tables of instant specification and US Patent '612.

This comparison clearly shows that 32K72 does not exhibit the characteristics of hybrid X1139Y.

In light of the above, Applicants respectfully request the Examiner reconsider and withdraw the rejection to claims 1-32 under 35 U.S.C. § 103(a).

VIII. Conclusion

In conclusion, Applicants submit in light of the above amendments and remarks, the claims as amended are in a condition for allowance, and reconsideration is respectfully requested.

No additional fees or extensions of time are believed to be due in connection with this amendment; however, consider this a request for any extension inadvertently omitted, and charge any additional fees to Deposit Account No. 26-0084.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

Reconsideration and allowance is respectfully requested.

Respectfully submitted,



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Application No. 09/759,708

**AMENDMENT — VERSION WITH MARKINGS
TO SHOW CHANGES MADE
In the Specification**

The paragraph beginning on page 41, line 32 has been amended as follows:

With the advent of molecular biological techniques that have allowed the isolation and characterization of genes that encode specific protein products, scientists in the field of plant biology developed a strong interest in engineering the genome of plants to contain and express foreign genes, or additional, or [modified] modified versions of native or endogenous genes (perhaps driven by different promoters) in order to alter the traits of a plant in a specific manner. Such foreign, additional and/or modified genes are referred to herein collectively as "transgenes". Over the last fifteen to twenty years several methods for producing transgenic plants have been developed, and the present invention, in particular embodiments, also relates to transgenic versions of the claimed hybrid maize line X1139Y.

In the Claims

Please amend the following claims:

6. (Amended)

[A] The tissue culture according to claim 5, the cells or protoplasts being from a tissue selected from the group consisting of leaves, pollen, embryos, roots, root tips, anthers, silks, flowers, kernels, ears, cobs, husks, and stalks.

8. (Amended)

The maize plant of claim 2 wherein said plant has been manipulated to be [is] male sterile.

10. (Amended)

The [maize plant breeding program] method of claim 9 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding,

restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

11. (Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 2, wherein said maize plant has derived at least 50% of its ancestral alleles from X1139Y and is capable of expressing a combination of at least two X1139Y [(commercial designation)] traits selected from the group consisting of: excellent yield potential, stability of performance across years and environments, good root strength, good stay green, good early growth, very good resistance to Gray Leaf Spot, moderate plant height, [suited] favorable to [the Corn Belt, (especially) Iowa, Illinois, Missouri, [and] Western Indiana,[] and Northeast regions] Michigan, New York, Vermont [of the United States], and Ontario and Quebec Canada and a relative maturity of approximately 114 based on the Comparative Relative Maturity Rating System for harvest moisture of grain.

14. (Amended)

The [maize plant breeding program] method of claim 13 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

15. (Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 12, wherein said maize plant has derived at least 50% of its ancestral alleles from X1139Y and is capable of expressing a combination of at least two X1139Y [(commercial designation)] traits selected from the group consisting of: excellent yield potential, stability of performance across years and environments, good root strength, good stay green, good early growth, very good resistance to Gray Leaf Spot, moderate plant height, [suited] favorable to [the Corn Belt, (especially) Iowa, Illinois, Missouri, [and] Western Indiana,[] and Northeast regions] Michigan, New York, Vermont [of the United States], and Ontario and Quebec Canada and a relative maturity of approximately

114 based on the Comparative Relative Maturity Rating System for harvest moisture of grain.

18. (Amended)

The [maize plant breeding program] method of claim 17 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

19. (Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 16, wherein said maize plant has derived at least 50% of its ancestral alleles from X1139Y and is capable of expressing a combination of at least two X1139Y [(commercial designation)] traits selected from the group consisting of: excellent yield potential, stability of performance across years and environments, good root strength, good stay green, good early growth, very good resistance to Gray Leaf Spot, moderate plant height, [suited] favorable to [the Corn Belt, (especially) Iowa, Illinois, Missouri, [and] Western Indiana,[] and Northeast regions] Michigan, New York, Vermont [of the United States], and Ontario and Quebec Canada and a relative maturity of approximately 114 based on the Comparative Relative Maturity Rating System for harvest moisture of grain.

21. (Amended)

The maize plant of claim 20 wherein said maize plant has been manipulated to be [is] male sterile.

23. (Amended)

The [maize plant breeding program] method of claim 22 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhance selection, and transformation.

24. (Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 20, wherein said maize plant has derived at least 50% of its ancestral alleles from X1139Y and is capable of expressing a combination of at least two X1139Y [(commercial designation)] traits selected from the group consisting of: excellent yield potential, stability of performance across years and environments, good root strength, good stay green, good early growth, very good resistance to Gray Leaf Spot, moderate plant height, [suited] favorable to [the Corn Belt, (especially) Iowa, Illinois, Missouri, [and] Western Indiana,] and Northeast regions] Michigan, New York, Vermont [of the United States], and Ontario and Quebec Canada and a relative maturity of approximately 114 based on the Comparative Relative Maturity Rating System for harvest moisture of grain.

27. (Amended)

The [maize plant breeding program] method of claim 26 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

28. (Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 25, wherein said maize plant has derived at least 50% of its ancestral alleles from X1139Y and is capable of expressing a combination of at least two X1139Y [(commercial designation)] traits selected from the group consisting of: excellent yield potential, stability of performance across years and environments, good root strength, good stay green, good early growth, very good resistance to Gray Leaf Spot, moderate plant height, [suited] favorable to [the Corn Belt, (especially) Iowa, Illinois, Missouri, [and] Western Indiana,] and Northeast regions] Michigan, New York, Vermont [of the United States], and Ontario and Quebec Canada and a relative maturity of approximately

114 based on the Comparative Relative Maturity Rating System for harvest moisture of grain.

31. (Amended)

The [maize plant breeding program] method of claim 30 wherein the plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.

32. (Amended)

A maize plant, or its parts, wherein at least one ancestor of said maize plant is the maize plant, or its parts, of claim 29, wherein said maize plant has derived at least 50% of its ancestral alleles from X1139Y and is capable of expressing a combination of at least two X1139Y [(commercial designation)] traits selected from the group consisting of: excellent yield potential, stability of performance across years and environments, good root strength, good stay green, good early growth, very good resistance to Gray Leaf Spot, moderate plant height, [suited] favorable to [the Corn Belt, (especially) Iowa, Illinois, Missouri, [and] Western Indiana,() and Northeast regions] Michigan, New York, Vermont [of the United States], and Ontario and Quebec Canada and a relative maturity of approximately 114 based on the Comparative Relative Maturity Rating System for harvest moisture of grain.

Please add the following new claims:

33. (New)

A method of making a hybrid maize plant designated X1139Y comprising:
crossing an inbred maize plant GE565937 deposited as _____ with a second inbred maize plant GE502199, deposited as _____; and
developing from the cross a hybrid maize plant representative seed of which having been deposited under ATCC Accession Number _____.

34. (New)

A method of making an inbred maize plant comprising:
obtaining the plant of claim 2 and
applying double haploid methods to obtain a plant that is homozygous at essentially every locus,
said plant having received all of its alleles from maize hybrid plant X1139Y.

35. (New)

A method for producing an X1139Y progeny maize plant comprising:

- (a) growing the plant of claim 2, and obtaining self or sib pollinated seed therefrom;
and
- (d) producing successive filial generations to obtain a X1139Y progeny maize plant.

36. (New)

A maize plant produced by the method of claim 35, said maize plant having received all of its alleles from hybrid maize plant X1139Y.

37. (New)

The maize plant of claim 36 wherein said maize plant comprises 2 or more X1139Y characteristics described in Table 1 or 2.

38. (New)

A method for producing a population of X1139Y progeny maize plants comprising:

- (a) obtaining a first generation progeny maize seed produced by crossing the maize plant of claim 2 with a second maize plant;
- (b) growing said first generation progeny maize seed to produce F₁ generation maize plants and obtaining self-pollinated seed from said F₁ generation maize plants; and
- (e) repeating the steps of growing and harvesting successive filial generations to obtain a population of X1139Y progeny maize plants.

39. (New)

The population of X1139Y progeny maize plants produced by the method of claim 38, said population, on average, deriving at least 50% of its ancestral alleles from X1139Y.

40. (New)

A X1139Y maize plant selected from the population of X1139Y progeny maize plants produced by the method of claim 38, said maize plant deriving at least 50% of its ancestral alleles from X1139Y.

41. (New)

The method of claim 38, further comprising applying double haploid methods to said F_1 generation maize plant or to a successive filial generation thereof.